

133 into the saguaro forests of the eastern base of Sierra Seri; on the east
137 it is miles in breadth, passing gradually into the normal Sonoran plain;
on the south it widens still further, stretching all the way to Arroyos
de Gil and Pozo Escalante, and merging into the playa-like mud-flats
bordering Laguna la Cruz, into which the gulf waters are sometimes
forced by northwesterly gales at high spring tides. Throughout this
portion of the desert, marine shells are scattered over the playa-like
flats or lodged in the adjacent banks, sometimes in great beds; the
vegetation is scantier than usual and largely of salt-loving habit; the
mud-flats are usually coated with saline and alkaline crusts, while the
dunes are soft and fluffy, and expand into broad belts perforated with
the tunnels of the surprisingly abundant rodents. Across this plain
131 of bitter sand-dust lie the two hard land routes to Seriland—the sup-
posed Escalante route of 1700, down the fan of Rio Bacuache and
thence by Barranca Salina; and the Kacinas route, down the northern
border of the Rio Sonora fan and thence by Pozo Escalante to the
shores of Bahia Kino.¹

000 Desierto Encinas is an impossible human habitat in any proper sense;
it is merely a broad and hardly passable boundary between habitats.
The hardy stock of the frontier ranchos, pasturing partly on the thorny
fruit of the cholla, push far out on the plains, and are sometimes watered
for short periods, under strong guards of heavily armed vaqueros, at
Barranca Salina; yet the greater part of the expanse is trodden only
by the Seri. Two or three ruined frames of Seri jacales and a few
361 graves crown the low knoll near Pozo Escalante, and there are one or
two house remnants near Barranca Salina; these are notable not only
as the easternmost remaining outposts of Seri occupancy, but because
they represent the only known instances in all Seriland of the erection
of even temporary houses adjacent to water. Distinct paths, trodden
[187] deep by bare Seri feet, radiate from both waters toward the Seriland
interior, but no traceable trails extend eastward.

133 The southern limit of Desierto Encinas is marked either by the broad
mud-flats opening into Laguna la Cruz or by the coast of the gulf, the
coast cutting the lower portions of the plain being accentuated by a
sand-bank 30 or 40 feet high, against which the surf thunders in nearly
[187] continuous roar, audible halfway or all the way to Pozo Escalante. A
Seri trail skirts the crest of this bank, sending occasional branches into

[122] ¹ Both the routes were traversed by the expedition of 1891, the former from the headwaters of Rio
Bacuache to the upper portion of its alluvial fan, and then from the abandoned Rancho Libertad on
the lower portion of the fan across Desierto Encinas by way of Barranca Salina. In the northern
crossing a light vehicle (the first to traverse this portion of the desert, drawn by four horses and
aided by several horsemen, was taken from Rancho Libertad across the northern portion of Playa
Norteno and thence up Arroyo Mitchell to a point midway between Barranca Salina and Johnson
peak, and was brought back over the same route. The Kacinas trail from Rancho San Francisco de
Santa Rita was traversed four times each way by the same outfit, and once each way by the running
gear of a heavy wagon carrying the radio craft (about 1,000 pounds in weight) in which the Seri
waters were navigated, this vehicle being drawn by 8 to 12 horses, frequently changed. Typical
aspects of both routes are shown in plate 23, the upper figure representing the Kacinas trail and
the lower a distant view of Sierra Seri, taken from Playa Norte, in the depths of Desierto Encinas.

the interior. At Punta Antigualla the bank expands and rises into a great mammillated shell-mound nearly 100 feet high, with several of the cusps occupied by more or less ruined jacales; and occasionally occupied houses occur midway thence to the southernmost point of Sierra Seri, and again at the base of the first spur east of Punta Ygnacio. Beyond Punta Antigualla the sweep of the waves is stronger than in Bahía Kino, and the coastal sand-bank is generally higher. Between the rocky buttresses of Punta Ygnacio and the next spur eastward the sand-ridge rises fully 50 feet above mean low tide, and here, as elsewhere, its verge is protected by a fog-fod chaparral thicket with occasional clumps of okatilla and other cacti. Behind the coast barrier lie lagoon-like basins, generally dry and floored with saline silt-beds, though sometimes occupied by briny pools formed through seepage during southwesterly gales; and there are physiographic indications that the northwestward extension of Laguna la Cruz formerly stretched some miles farther than now and lay in the rear of Punta Antigualla in such wise as to form a source of supply of the clam-shells of which the eminence is built.

2. Sierra Seri is a double range, divided mid-length by a broad saddle barely 2,000 feet in height.¹ Like other Sonoran ranges, the nuclear portions are exceedingly rugged and precipitous—at least two of its picachos shoot so boldly that they commonly seem to overhang, and have been called leaning peaks. In large part the precipices rise abruptly from a symmetrical dome molded by sheetflooding, much as the insulated buttes rise from the Baenache fan in northeastern Seri-land; so that the tract lying between Desierto Encinas and El Infernillo is a composite of exceptionally precipitous and exceptionally smooth mountain slopes. One of the Seri trails radiating from Barranca Salina lies across the mid-sierra saddle; others push into several mountain valleys, and the largest leads to Tinaja Trinchera, at the base of Johnson peak, where there are a few low walls of loose-laid rubble, somewhat like those of the trincheras (entrenched mountains) farther eastward—the only structures of the sort seen in Seri-land. Toward the southern end of the range lie various trails, the most conspicuous paralleling the coast, either near the shore or over the steep salients, according to the configuration; while here and there ruinous jacales a few yards from the coast attest sporadic habitation. The eastern shore of Bahía Kunkuk from Punta Ygnacio northward reveals a typical geologic section of the Sonoran province: the transgressing waves have carved in the granite subterranean a broad shelf lying just below mean low tide and usually stretching several furlongs offshore; this shelf is relieved here and there by remnantal crags of obdurate rocks, cumbered by boulders and locally sheeted with sand and arkose derived from mechanically disintegrated granite; while the

¹ The northern portion, as seen from the east, is shown in plate III; the southern portion, as seen from the west, appears in the upper part of plate IV, while the southwesternmost point is shown in the lower part of the same plate.

133 inner margin of the shelf is a sea-cliff, usually 30 to 80 feet high, of which the lower half is commonly granite and the upper half unconsolidated and recent-looking mechanical debris collected by sheetflood erosion. Sometimes the granite of the subterrane is replaced by volcanics; sometimes ancient and firmly cemented talus deposits separate the superficial mantle from the subterrane, as shown in the lower part of plate v; sometimes the line of sheetflood planation passes below tide level, when the waves beat against the unconsolidated deposits in a deep embayment; sometimes the sharply defined planation surface ends abruptly at the sides of subranges or buttes shooting upward in the abrupt slopes characteristic of the sierra proper; yet this 10-mile stretch of coast is a nearly continuous revelation of the structure of sheetflood-carved plains and of modern marine transgression. The debris of the combined processes forms an abundant and varied assortment of boulders, cobbles, and pebbles, whence the inhabitants readily derive their simple implements without need for studied forethought or manual cunning.

The long sand-spit terminating in Punta Miguel and the shorter one terminating in Punta Arena are the product of geologically recent wave building, and consist of irregular series of V-bars, backed by lagoon-like basins and enclosing considerable bodies of brine in the central portions; and the bars and basins become successively higher outward, in such wise as to attest the secular subsidence of this coast. Several jacales are located on the higher portion of the southern sand-spit, midway between Punta Granita and Punta Miguel, while foot-paths traverse the flat and skirt the coast. Toward the terminal portion of the spit the sand is blown into hummocks, held by clumps of salt enduring and sand-proof shrubbery; but there are no rancherías here, despite the fact that it is a natural point of embarkation—doubtless because no Seri structure could withstand the sand-drifting gales and storm inundations of this exposed spot. The more protected lagoons behind the outer bars harbor abundant waterfowl, within bowshot of shrub-clumps and dunes well adapted to the concealment of hunters, while the mud flats open to the tide abound in clams and other edible things. The features of the Punta Miguel sand-spit are repeated with variations along the eastern shore of El Infernillo; and Seri jacales, evidently designed for temporary occupancy, occur here and there, usually on higher banks above reach of the severer storms.

[361] 3. Tiburon island itself is apparently the chosen home of the Seri—
[131] a habitat to which the mainland tract is at once a dependency, an alternative refuge, and a circumsvallation. Its dominant range, Sierra Kunkak, mates Sierra Seri in its essential features, though the rocks are for the greater part ordinarily obdurate eruptives rather than exceptionally obdurate granites, as in the mainland sierra; accordingly the range is somewhat lower and broader, while the sheetflood sculpture, with its sharp transition into precipitous cliffs, is somewhat less trench-

ant. Sierra Mener is a third term in the mountain series, in structure and geomorphy as in altitude; while the interior plain is a homologue of that portion of Desierto Encinas lying north of Playa Noriega—i. e., of its (potentially) free-drained portion. Almost the entire perimeter of Tiburon is suffering marine transgression, and is fringed with scariffs overlooking wave-carved shelves; and in both form and structure the greater part of the coast repeats, with minor variations, the features of the mainland coast from Punta Ygnacio northward. Partly because of the superior magnitude and height of its debris-yielding sierra, partly because of protection from the wave-beat of the open gulf, the eastern shore is skirted with a talus-shape slope, usually two to four miles wide; and while there are unmistakable evidences of sheetflood carving in the higher portions of this plane, the coastal cliff commonly reveals nothing but heterogeneous debris, sometimes rising thirty or forty feet above tide. Somewhat the greater part of the volume of this debris is fine—i. e., sand and silt and nondescript rock-matter; but there is always a considerable element of larger rock-fragments, which gather along the shore in a pavement of bowlders and pebbles (upper figure of plate V). These coarse materials—important factors in aboriginal industry—are harmoniously distributed; more conspicuously on the ground than on the map, the coast is set with salients (of which Punta Narragansett is a type), consisting merely of exceptional accumulations of debris from gorges in the sierra and from shallow arroyos, or pebble washes, traversing the coastwise plain. These salients owe their prominence partly to the relative coarseness, partly to the abundant supply, of fragmental material from the heights; and about their extremities the beach is paved with bowlders, which grade to cobbles or even to pebbles along the recedent shores on either hand. This distribution of cobbles is one of the conditions governing the placement of Seri rancherias; and in many cases the jacales are located, either singly or in groups, where the coastal salients and recedents meet, and where there is an abundant supply of cobbles of convenient size and wave-tested hardness.

The coastwise plain skirting eastern Tiburon has a few wave-built projections analogous to those east of El Invernillo; the most conspicuous of these are Punta Tormenta, Punta Tortuga, and Punta Perla with its tide-swept extensions, Bajos de Ugarita. All of these are located primarily by sierra-fed arroyos, but all are greatly extended by wave-borne material laid down along lines determined by the prevailing currents of this best-protected portion of the coast. The long outer face of Punta Tormenta, shaped by the storms of Bahia Kun-kaak, is strikingly regular and symmetric; its broad extremity and inner face are diversified by subordinate bars and lagoons, evidently tending to connect with the main coast toward Punta Tortuga, and thereby to transform the whole of Rada Ballena into a lagoon. Already the narrow embayment is so shallow that, although a com-

133 portable haven at high tide, it is mostly mud-flat and sand-waste at extreme low tide—a condition which explains the stranding of an 80-foot whale in this treacherous harbor about 1887. The rada is between two and three miles in length. It abounds in marine life of kinds preferring quieter waters: clams are plentiful in its mud-flats, 136 a sponge lines portions of the bottom toward its inner extremity, oysters cluster numerously on bowlders and on the mangrove-like roots and trunks of a large shrub along the outer shore, and various fishes find refuge here from the fierce currents and the hungry sharks and porpoises of the open strait; these and other creatures form food for innumerable waders and other water-fowl that seek shelter in the quiet bay, which is still further protected by salt-enduring shrubbery on the bars of the point and by the shrubby thickets and wave-cast banks and wind built dunes on the mainland side.

361 The combination of conditions renders this portion of the Tiburon coast the optimum habitat of the Seri Indians. There are, indeed, no houses or other traces of permanent habitation on Punta Tormenta itself, which is not only swept by gales but must sometimes be inundated by gale-driven waters at high spring tide; but at the inner end of the long sand spit, and also on the mainland opposite the outer portion of Rada Italiana, there are extensive and well-kept rancherias, capacious enough to accommodate comfortably thirty or forty Seri families, i. e., 150 or 200 persons. Toward its landward end the sand spit is built largely of pebbles and cobbles, of which thousands of tons are adapted to industrial use; sea-food is practically unlimited and is readily taken; water fowl literally crowd the protected rada within arrow-shot of natural cover; the outer slope of the bar is admirably suited for landing and embarking balsas in calm weather, while the bay is an ideal harbor for the portable craft, and the shrub-grown shores give unlimited opportunity for concealing them when not in use; the dunes and banks are high enough to protect the low jucales from storm-winds, while the abundant sponges and turtle-shells afford material for thatching and shingling the more exposed walls and roofs; and finally, 311 [312] it is but a favorite distance (about 4 miles) to the permanent fresh water of Tinaja Anita. From this Seri metropolis well trod trails 487 radiate toward all other parts of the island; the best beaten leads to the tinaja, sending branches into all the neighboring gorges, in which game is sometimes taken; next best worn is the trail laid across Sierra Kunkaak to strike Arroyo Carrizal mid-length of its permanently wet portion; others pass northward to rancherias at different points on the coast, and still another skirts the coast southward by several smaller rancherias to the considerable jacal collection near Punta Narragansett—this, like other longshore routes, having alternative trails, the evanescent fair-weather one following the beach, while the permanent path threads the thorn-set thickets marking the crest of the sea-cliff or cuts across the longer salients. The Narragansett rancheria is

also a center for radiating trails, the best-beaten of these leading toward the fresh waters of Tinaja Anita and Arroyo Carrizal; and even the rancherías half-way thence to Punta Mashém send their most permanent paths over 15 miles of intervening ranges and spall-strewn valleys toward the same waters. According to Mashém's cautious statements, there is a minor Seri metropolis at the northwestern spur of Sierra Kunkaak, within reach of Pozo Harty and Arroyo Agua Dulce, and two or three smaller rancherías along the western shore; but these were not reached by the 1803 expedition. 487

4. The seas washing Seriland are notably troubled by tides and winds. Gaping toward the Pacific, and narrowing and shoaling for the 800 miles of its length (measured from midway between Islas de Tres Marias and Cabo San Lucas), Gulf of California approaches Bay of Fundy, Bristol channel, and Broad sound as a tide accumulator; while the semidiurnal sweep of the waters in the upper half of the gulf is conditioned by the constriction of the basin to a fraction of its average cross-section at the narrows between Isla Tiburón and Punta San Francisco. Toward the head of the gulf the ordinary spring tides range from 20 to 25 feet, and may be much increased by favoring winds; the debacles culminate there, but the currents culminate off Seriland in the great tide-gate half dammed by the islands of Tiburón, San Esteban, San Lorenzo, and Salsipuedes, with their marine buttresses, and through the breaches of Pasaje Ulloa, Estrecho Alarcón, and Canal de Salsipuedes flow, four times daily, some two or three cubic miles of water in tremendous tidal floods, probably unsurpassed in vigor elsewhere on the globe. Naturally the islands and the adjacent coasts afford extraordinary examples of marine transgression; and while exceptional wave-work is a factor, the transgression is undoubtedly due mainly to the extraordinary tidal currents in this gateway of the gulf. The fierce currents and the frequent storms of the region condition local navigation, and have undoubtedly contributed to the development of the peculiarly light, strong, and serviceable water-craft of the aboriginal navigators among the islands. 361

El Infernillo derives its distinctive characteristics largely from the local character of the tides. Bahía Kunkaak is a funnel-shape embayment so placed as to catch half the volume of the incoming tide and to 33

¹Originally the name *Isle del diablo* (Devil-island) was applied to the various islands of this gateway of the gulf, including San Lorenzo, San Esteban, and San Agustín (now Tiburón), together with the smaller islets, as shown in the map of Pedro Fernando Omsang in *Noticia de la California y de su Comarca*, etc., por el Padre Miguel Vences, 1787, tomo III, p. 184; and Padre Omsang's account of the currents encountered in 1788 explains the designation: "The great sea which runs here even in fair weather would not allow us to stay, and it was with great difficulty we took in a little water. We now attempted to weather the Cape of San Gabriel de Salasipuedes, so greatly divided by canons on account of these islands, several contiguous points of land, and many ledges of sunken rocks extending a great way from the land. Here the sea is so agitated by the current that a gale or a calm make but little difference." (English translation of Vences' *Noticia*, titled *A Natural and Civil History of California*, 1798, vol. II, pp. 212-213). Hissell speaks of "the group of islands known as Salsipuedes, the largest of which is now called Tiburón" (*History of California*, 1888, vol. I, p. 225). Heby restricted the name to a single small island near the Baja California coast. Further references to the islands and their designation are noted *passim*, p. 46. 103
114

142 Amerindian¹ average; the feet are set straight in walking, as befits the
 [144] pedestrian habit; the arms are not elongated, and the thighs seem no
 longer in proportion to other elements of the stature than are those of
 the highest human types. In like manner the bodies are notably free
 [304] from artificial deformation; the skulls are not flattened or otherwise
 distorted; there is no scarification, or even tattooing; neither ears nor
 lips are pierced for pendants or labrets; the teeth are not filed or
 drilled, though in some cases at least the first incisors of females are
 extracted; and while there are trustworthy records of the piercing of
 the nasal septum for the insertion of pendants, no examples were found
 at Costa Rica in 1894. The food habits and other customs of the tribe
 indicate, or at least suggest, more or less specialized and perhaps dis-
 tinctive internal characters; but, without actual examination of the
 organs, these inferred characters demand little more than passing notice.

On reviewing the more prominent somatic characters of the Seri, it
 is found that the greater number are either functional or presump-
 tively correlated with function, and that only a few—chiefly stature
 and color—are simply structural; accordingly a comparison of the
 peculiar somatic features and the peculiar individual habits of the
 tribe would seem to be instructive in more than ordinary degree.

● 361 The most striking trait of the Seri is the pedestrian habit. The
 warriors and women and children alike are habitual rovers; their jacales
 and even their largest rancherías are only temporary domiciles, evi-
 dently vacant oftener than occupied; the principal rancherías are
 separated by a hard day's journey or more; and none of the known
 [312] rancherías or jacales of more persistent use are nearer than 4 to 10
 miles from the fresh water by which their occupants are supplied.
 Probably the most persistently occupied rancherías of the last half
 century have been those located from time to time near Costa Rica,
 yet even these were seldom occupied by the same group for more than
 a fortnight or possibly a month, and were often vacated within a day
 or two after erection. Still more temporary camps intervene between
 jacales, and their sites may be seen in numbers in the neighborhood of
 the better-beaten paths, or along the shores, or even over the track-
 less spall-strewn plains; they may be merely trampled spots, sparsely
 strewn with oyster shells and large bones gnawed at the ends, usually
 in the lee of a shrub or rock; in places of small shrubbery or excep-
 tionally abundant grass there may be two or three or perhaps half a
 dozen "forms" (suggesting the temporary resting places of rabbits), in
 which robust bodies nestled and shrugged themselves into the warm
 earth and under the meager vegetation. Rarely there are ashes and
 cinders hard by, to mark the site of a tiny fire, and more frequently
 battered and stained or greasy boulders record their own use as meat-

¹ The term *Amerind* (with the self-explanatory meanings *American Indian*, *Amerindian*, etc.) has been
 contributed by the Anthropological Society of Washington as a convenient collective designation for
 the aboriginal American tribes (*American Anthropologist*, new series, vol. 1, 1900, p. 122).

[1000]

THE PEDESTRIAN HABIT

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blocks or metates, though it is manifest that most of the camps were fireless and many foodless. It is particularly noteworthy that even the more temporary resting-places are seldom if ever less than a mile or two from the nearest fresh water. In short, the Seri are not a domestic ffolk, but rather homeless wanderers, customarily roving from place to place, frequently if not commonly sleeping where overtaken by exhaustion or storm, ordinarily slumbering through a part of the day and watching by night, habitually avoiding fresh waters save in hurried and stealthy visits, and apparently gathering in their flimsy huts only on special occasions.

In conformity with their rovingness the Seri are notable burden-bearers. They habitually carry their entire stock of personal belongings (arms, implements, utensils, and bedding), as well as their stock of food and—weightiest burden of all—the water requisite for prolonged sustenance amid scorching deserts, in all their wanderings, the water being borne chiefly by women, in ollas, either balanced on the head singly or slung in pairs on rude yokes like those of Chinese coolies. And they have never grasped the idea of imposing their burdens on their bestial associates; their coyote-curs are not harnessed or even led; when they surround and capture horses, burros, and kine they make no use of ropes, never think of mounting even when pursued by vaqueros, but immediately break the necks or club out the brains of the beasts, perchance to tear the writhing body into quarters and flee for their lives with the reeking flesh still quivering on their sturdy heads and brawny shoulders—and scores of vaqueros agree in the affirmation (wholly incredible as it would be if supported by fewer witnesses) that even when so burdened the Seri skim the sand wastes of Desierto Eufinas more rapidly than avenging horsemen can follow.

The hardly conceivable fleetness of the Seri is conformable with their habitual rovingness and their ability as burden-bearers; and this faculty is established by cumulative evidence so voluminous and consistent as to outweigh the presumption arising from the standards attained among other peoples. A few minutes after they were photographed, the group of boys shown in plate XVI, with several others of about the same size, provided themselves with a stock of their favorite human-hair cords, "rounded up" a dozen mongrel coyote-dogs haunting the rancharia at Costa Rica, and herded the unwilling animals toward a shrubbery-free space a quarter of a mile away, in order to rope them in imitation of the work of the Mexican cowboys earlier in the morning. From time to time as they went a frightened ear sneaked or broke through the cordon of boys, and made for distant shrub-tufts at top speed; yet in every case a boy darted from the ring, headed off the animal within one or two hundred yards, and lashed it back to its place. On arriving at their miniature rodeo the boys widened their ring, and at a signal scattered and frightened the dogs; then, when the fleeing animals had a fair start, each selected his victim and fol-

mean

PRIME VALUE OF WATER

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average man daily ingests nearly 6 pounds of water and but little over 1⁰⁰⁰ pound of actually solid nutrients. Thus the ratio of the consumption of liquid food to that of solids is (naturally, in view of that smaller absorption of the liquid constituent as characteristic especially of arid regions) somewhat larger than the ratio of water to solids in the human system, the ratios being nearly 6:1 and 4:1, respectively.¹ This analysis serves measurably to explain the peculiarly developed water-consciousness of all desert peoples, a consciousness expressed in the first tenets of faith among the Pueblo, in the fundamental law of the Papago, and in the strongest instinct of the Seri; for among folk habituated to thirst through terrible (albeit occasional) experience, water is the central nucleus of thought about which all other ideas revolve in appropriate orbits—it is an ultimate standard of things incomparably more stable and exalted than the gold of civilized commerce, the constantly remembered basis of life itself.

The potable water of Seriland is scanty in the extreme. The aggregate daily quantity available during ten months of the average year³¹² (excluding the eight wettest weeks of the two moist seasons) can hardly exceed 6.1 or 6.3 of a second foot, or 60,000 to 125,000 gallons per day, of living water, i. e., less than the mean supply for each thousand residents of a modern city, or about that consumed in a single hotel or apartment house. Probably two-thirds of this meager supply is confined to a single rivulet (Arroyo Carrizal) in the interior of Tiburon, far from the food-yielding coasts, while the remainder is distributed over the 1,500 square miles of Seriland in a few widely separated aguajes, of which only two or three can be considered permanent; and this normal supply is supplemented by the brackish seepage in storm-cut runnels, as at Barranca Salina, or in shallow wells, as at Pozo Escabante and Pozo Hardy, which is fairly fresh and abundant for a few weeks after each moist season, but bitterly briny if not entirely gone before the beginning of the next. The scanty aggregate serves not only for the human but for the bestial residents of the Seri principality; and its distribution is such that the mean distance to the nearest aguaje throughout the entire region is 5 or 10 miles, while the extreme distances are three greater.

The paucity of potable water and the remoteness of its sources naturally affect the habits of the folk; and the effect is intensified by a curious custom, not fully understood, though doubtless connected with militant instincts fixed (like the habits of primitive men generally) by abounding faith and persistent ritualistic practices—i. e., the avoidance of living waters in selecting sites for habitations or even temporary camps. Thus the principal rancherías on Tiburon island, about Rada Ballena, are some 4 miles from Tinaja Anita, the nearest aguaje; the

¹ The place of water among food substances is more fully discussed in *The Potable Waters of Eastern United States*, 10th Ann. Rep. of the U. S. Geol. Survey, 1901, pp. 3-8; the physiological consequences of deprivation of water are outlined in *The Value of the Desert, Atlantic Monthly*, April 1902, pp. 455-468.

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extensive rancheries near Punta Farraganscott measure 10 miles by trail from the same aguaje; the half dozen jacales about Campo Navidad are separated by some 15 miles of stony and hilly pathway from the alternative watering places of Tinaja Anita and Arroyo Carrizal;² and the huts crowning the great shell-heap of Punta Antigualla—one of the most striking records of immemorial occupancy in America—are nearly or quite 10 miles by trail from Pozo Escalante, and still further from Aguaje Parilla, the nearest sources of potable water. These are but typical instances; and while there are ruined huts (evidently regarded as temporales) near the dead waters of Barranca Ballas and Pozo Escalante, they tell the tribal policy of locating habitations in places surprisingly remote from running water. Like other desert folk, the Seri have learned to economize in water-carrying by swigging incredible quantities on their occasional visits to the aguajes; it is probable, too, that their systems are insured, somewhat as are those of the desert animals that survive deprivation of water for days or months, to prolonged abstinence from liquid food; yet it seems safe to assume that at least half of the water required in their vital economy (say 2 or 3 pounds apiece daily, on an average) is consumed after transportation over distances ordinarily ranging from 4 to 12 miles. Under these conditions the Seri have naturally produced a highly developed water industry; they are essentially and primarily water-carriers, and all their other industries are subordinated to this function.

415
Concomitantly with their customs, the Seri have a highly differentiated aquarian device in the form of a distinctive type of olla, which is remarkable for the thinness and fragility of the ware, i. e., for largeness of capacity in proportion to weight. Representative specimens are illustrated in plates XXXII and XXXIII (the former painted, as already described). The dimensions of the two vessels are as follows: painted olla, height 34 cm. (13½ inches), mean diameter 32.5 cm. (12¾ inches); plain olla, height 32 cm. (12½ inches), mean diameter 31 cm. In both specimens the walls are slightly thickened at the brim, those of the painted vessel measuring about 4 mm. and those of the plain vessel about 4.5 to 5 mm. in thickness. Below the brim the walls are thinned to about 3 mm., as is shown in the fractured neck of the painted specimen. The capacity of these Seri vessels in proportion to their weight, compared with that of typical examples of ware produced by other desert peoples, is shown in the accompanying table.

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Comparison of the mean ratios indicates that the Seri ware is almost exactly twice as economical as that of the P'ueblos—i. e., that its capacity is twice as great in proportion to the weight of the vessel; and that

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² The procurement of water in this hard province was impeded in the 1898 expedition, during which the cost of the conveyance, reckoned on the basis of the time and labor involved in obtaining it, was estimated at \$10 or \$12 per gallon, or about the wholesale price of the finest champagne.

- 262 Probably second in importance among Seri prey, as a food-source merely, stand the multifarious fishes with which the waters of Seriland teem, particularly if the class be held to comprise the cetaceans and seals and selachians ranked as leaders of the fish fauna in Seri lore.
- 225 Naturally, whales lie outside the ordinary range of Seri game, yet they are not without place in the tribal economy. During the visit to the Seri rancheria near Coeta Rion in 1894, it was noted that various events—births, deaths, journeys, etc.—were referred to "The Time of the Big Fish"; and it was estimated from apparent ages of children and the like that this chronologic datum might be correlated roughly with the year 1887. The era-marking event was memorable to Mash'm, to the elderwomen of the Turtle clan, and to other mature members of the group, because they had been enabled thereby to dispense with hunting and fishing for an agreeably long time, and because they had moved their houses; but the providential occurrence was not interpreted at the time.
- [173] On visiting Isla Tiburón in 1895, the interpretation became clear; along the western shore of Isla Ballena, near the first sand spit north of the point, lay the larger bones of a whale, estimated from the length of the mandibles and the dimensions of the vertebrae to have been 75 or 80 feet long. It was evident that the animal had gone into the usual water at exceptionally high tide and had stranded during the ebb; while the condition of the bones suggested an exposure to the weather of perhaps half a dozen years. On the shrubby bank above the beach, hard by the bleaching skeleton, stood the new rancheria, the most extensive seen in Seriland, comprising some fifteen or twenty habitable jacales; and fragments of ribs and other huge bones about and within the huts attested transportation thither after the building, while the shallowness of the trails and the limited tramping of the fog shrubbery gave an air of freshness to the site and surroundings. The traditions and the relics together made it manifest that "The Time of the Big Fish" had indeed marked an epoch in Seri life; that when the leviathan landed (whether through accident or partly through efforts of balas men) it was quickly recognized as a vast contribution to the Seri larder; and that some of the clans, if not the entire tribe, gathered to gorge first flesh and blubber, next sun-softened cartilage and chitin, and then epiphyses and the fatty bones. Some of the ribs were splintered and crushed, evidently by blows of the hupf, in order to give access to the cancellate interiors; several of the vertebrae were battered and split, and nearly all of the bones bore marks of hupf blows, aimed to loosen cartilaginous attachments, start epiphyses, or remove spongy and grasy processes. Little trace of fire was found; in one case a mandible was partly scorched, though the burning appeared to be fortuitous and long subsequent to the removal of the flesh; and a bit of charred and gnawed epiphysis, much resembling the fragments of half-cooked turtle plastron scattered over Seriland, was picked up in
- 172
262
- [361]
- [252]

*One of the smaller vertebrae and part of a rib are shown in the upper figure of plate vi.

ing and at the same time enrich the tribal larder with a game beneath the dignity of the warriors; while still smaller boys similarly chase the rabbit, which is commonly scorned by the striplings. The conventional hare-hunting party is three, and it is deemed disreputable to increase this number greatly. The youths spread at sight of the game and seek to surround it, taking ingenious and constant advantage of the habit of the hare to run obliquely or in zigzags to survey more readily the source of its fright; for some time they startle it but slightly by successive appearances at a distance, but gradually increase its harassment until it bounds hither and thither in terror, when they rapidly close in and seize it, the entire chase commonly lasting but a few minutes. The quarry is customarily taken alive to camp, where it is quickly vent to fragments and the entrails and flesh and most of the bones consumed; the skin usually passes into possession of a matron for use as infantile clothing or cradle bedding, while the ears are kept by the youth who first seized the game until his feat is eclipsed by some other event—unless chance hunger sooner tempts him to transmute his trophy into pottage.

While the collective, semicereemonial style of chase alone is thoroughly good form in Seri custom, it is often rendered impracticable by the scattering of the tribe in separate families or small bands, in which case the buru and its associates, like the larger carnivores customarily, are taken by strategy rather than by strength. This form of chase is largely individual; in it archery plays a leading rôle; and in it, too, ambuscade, stealthily lying in wait, and covert assault attain high development. It is closely analogous with the warfare typical of the tribe; and it is especially noteworthy as one of the most effective stimuli to intellectual activity, and hence to the development of invention—if the term may be applied to industrial products so lowly as those of the Seri.

The chief artifact produced by the strategic chase on land would seem to be the analogue of the harpoon used at sea, i. e., the arrow. This weapon is one of the three or four most highly differentiated and thoroughly perfected of the Seri artifacts, ranking with cauteenolla and balia, and perhaps outranking the turtle-harpoon. It is fabricated with great care and high skill, and with striking uniformity in details of material and construction. A typical example is 23 inches in length and consists of three pieces—point, foreshaft, and main shaft (feathered toward the neck). The foreshaft is 8½ inches long, of hard wood carefully ground by rubbing with quartzite or pumice into cylindrical form, about three-eighths of an inch in diameter at the larger end and tapering slightly toward the point; the larger end is extended by careful grinding into a tang which is fitted into the main shaft, the joint being neatly wrapped with sinew. This main shaft is a cane-stalk (*Phragmites communis*?) 15 or 16 inches long, carefully selected for size and well straightened and smoothed; it is feathered with three equidistantly-

342

of the building process may be said to end; for up to this point the process is a collective one and the materials are essentially uniform, while thereafter the completion of the work depends largely on individual or family caprice, and the materials are selected at random. Moreover, the framework is fairly permanent, usually surviving a number of occupancies extending over months or years, and outlasting an equal number of outer coverings; so that all habitable Seriland is dotted sparsely with jacal skeletons, sometimes retaining fragments of walls or roof, but oftener entirely denuded.

The conversion of the framework into a habitable jacal is effected by piling around and over it any convenient shrubbery, by which it is made a sort of bower; sometimes the conversion is aided by the attachment of additional tie-sticks both above and below the main horizontal pieces, as illustrated in the upper figure of plate IX; sometimes, too, the material of walls and roof is carefully selected and interwoven with such pains as to form a rude thatch, as in the chief jacal at Kada Ballena (the upper figure in plate VI); but more commonly the covering is collected at random and is laid so loosely that it is held in place only by gravity and wind pressure; and may be dislodged by a change of wind. Ordinarily the walls are thicker and denser than the roofs, which are supplemented in time of occupancy by haunches of venison, remnantal quarters of cattle and horses, half-eaten turtles, hides and pelts, as well as bird-skin robes, thrown on the bows partly to keep them out of reach of coyotes and partly to afford shade. Most of the jacales about the old rancheria at Punta Tormenta (abandoned at "The Time of the Big Fish"), which may be regarded as the center of the turtle industry, are irregularly clap-boarded with turtle-shells and with sheets of a local sponge, as illustrated in plate VII. This sponge abounds in the bight of Kada Ballena, where at high water it spreads over the silty bottom in a slimy sheet, and at low water with off-shore gales is left by the waters to dry into a light and fairly tenacious mat, which is gathered in sheets for bedding as well as for house making material (a specimen of the sponge—probably *Chalina*—is shown on larger scale in plate VIII). On the frontier the jacales may be modified by the introduction of sawed or riven lumber, as illustrated by some of the structures at Costa Rica (shown in plate XI); but even here there is a strong disposition to adhere to the customary form, and especially to the conventional framework, as indicated by the example in plate X.

● 361

While the jacales are not consistently oriented, they reveal a primary preference for facing away from the prevailing wind and toward the nearest sea, with a secondary preference for southern and eastern exposures—the former preference being easily explained, since a gale from the front quickly strips walls and roof and scatters the materials afar. No definite order is observed in the placement of the several jacales in the larger rancherias; apparently the first is located at the choice of the leading elderwoman, and the others are clustered about it at the com-

[361]

THE BUILDERS' CHANT

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more convenient. Usually the several jacales are entirely separate, but at Punta Tormenta; Punta Narragansett, and still more notably at Rada Ballena, individual huts were found either extended to double length or joined obliquely in such wise as to show two fronts (as illustrated in plate VI). The conventional frameworks appear to be common tribal property, at least to the extent that an abandoned skeleton may be preempted by any comer; while the addition of walls and roof appears to afford a prescriptive proprietary right to the elderwoman and family by whom the work is done—though the right seems to hold only during occupancy, or until the temporary covering is dislodged. 423

The jacales are without semblance of furnishing, beyond an occasional ash and a few loose pebbles used as hupps; though the nooks behind the bows and tie-sticks sometimes serve as places of concealment for paint-cups, awls, hair bobbins, and other domestic trifles. There is no floor but earth, and this remains in natural condition, except for trampling and wearing into wallows, recalling those of fowls and swine, which afford a rough measure of the periods of occupancy; there is no fireplace—indeed, fires are rarely made in the jacales, nor for that matter frequently anywhere; and there are no fixed places for bedding, water ollas, or other portable possessions, none of which are left behind when the householders are abroad. 352 [342]

Little is known of the actual process of jacal building, especially in Seriland proper; but the observations of Señor Encinas and his vaqueros on the frontier corroborate Mashém's statements that the houses are built by (and belong to) the matrons; that several women customarily cooperate in the collection of the okatilla and erection of the framework; that the only tools used in the processes are hupps and miscellaneous sticks; and that the placing and fitting of the beams and tie-sticks are accompanied by a chant, usually led by the eldest matron of the group. The same informants support the ready inference from the structure that the shrubbery and other material forming walls and roofs are gathered and placed from time to time by the women occupying the jacales. 342 462 [423]

The Seri building chant is suggestive. Neither Señor Encinas nor Mashém regarded it as religious or even ritualistic, but merely as a work-song designed (in the naive notion of the latter) to make the task lighter; and it seems probable that the local interpretation is correct. If so, the simple chant at once offers rational explanation for its own existence, and opens the way to explanation of the elaborate building rituals of more advanced tribes. The work-song is a common device in many lowly activities, ranging from those of children at play to those of sailors at the windlass, and undoubtedly serves a useful purpose in guiding, coordinating, and concentrating effort; to some extent the vocal accompaniment to the manual or bodily action apparently expresses that normal interrelation of functions manifested by second- 182 342 553

185 groups or clans between the waterholes and
192 their temporary dwellings by the sea, chasing
for game or searching for cactus fruits,
sleeping wherever weariness overtook them,
or where the successful end of a hunt left
them gorged and drowsy. Under a climate
where frost is almost unknown they needed
no protection except from the sun, and built
no other dwellings than their brush-heap
jacals (Fig. 3). Living in animal-like sav-
agery, without commerce or industry, the
Seri's every bodily character and function
were directed toward the provision, day by
day, of the food and water necessary for life.

312 Potable water, a commodity so abundant
in most regions as to divert conscious atten-
tion from its paramount role in physiologic
function and in industrial economy, attained
in Seriland the primary place of importance
because of its rarity. In that arid land it is
scanty to the extreme. Two thirds of the
meager supply is confined to a single rivulet
in the interior of Tiburon Island (Fig. 4).
Because of this and other widely separated
aguajes within the island whose shores pro-
vided the greater part of their food resources,
the Seris early found this island the most
tolerable habitat in their desolate realm.

225 The most conspicuous single article in the
[262] dietary of the Seri, and undoubtedly that
which first determined the location of his
habitat, is the green sea turtle which is
abundant throughout the Gulf of California;
but particularly so in the narrow channel
between Tiburon Island and the mainland.
There the shallow lagoons abound with its
marine grass food plant, and the sandy
beaches provide optimum conditions for egg
laying and hatching. In consequence of this
natural provision for abundant food, easily
obtained, perhaps half the aggregate life of
the Seri tribe came to be spent within easy
reach of the feeding and breeding grounds
of the turtle.

● [364] The most extensive and permanent of all
Seri communities was established on the
channel side of the island, just back of the
lagoon in which the turtles feed and whose
sands provided eggs and the succulent flesh
of newly-hatched turtle young. When fe-
226 males could not be captured at the laying
501 grounds, the big chelonians were speared

[p. 194(B)]

[Text continues on p. 195(B)]

- 614 hundred Seris at a time. They lived in maternal groups or clans in which the elder females were of great prominence in the management of everyday affairs. When, in the wanderings of a family a new camp was decided upon, the elder matron usually [462] erected the jacal alone, without the aid of men or boys, gathering the long poles of the ocotillo or the branches of desert trees and fashioning them into an arched framework over which a covering of brush, and often later of turtle shells, served to give protection from the desert sun. After the household was prepared, she took her place within easy reach of the meager and squalid family possessions, and around this nucleus other matrons and their children gathered in the course of a day or two. It was usually three or four days, and sometimes a week, before the brothers and husbands came wandering in from their roving search for food to take their places at the new camp site.
- 482 From the turtle fishing camps on the chan-
312 nel, the nearest fresh water was at a distance

[p. 196(A)]

[89 cont.]

000 abundant flying and, especially, marine fauna.

511 For a modern technology, their region has great resources, but for the culture of the Seri it is frankly inhospitable. The standard of living is exceedingly low, as is proclaimed by natives and foreigners and as is demonstrated by the illnesses and hunger that weaken the population.

[90] The Seri truly form part of our Western society, in so far as they catch fish, with fishhooks and motorboats, to sell in the markets of Hermosillo, Nogales, and Tucson, and they [177] obtain payments in national specie and coin. The part that 182 they form, however, has its own internal structure, which regulates the relations with the environment and among its mem- [161] bers, even though a group of 218 persons, which suffers severe alterations in percentages from disasters like the sinking of a boat or strokes of good luck like the establishment of a prosperous fishing camp, is almost insignificant for the nation.

Most probably they have never been much more numerous, and they must not have had great cohesion in the past, a situation explicable in view of their nomadic gathering economy. 621 Toward the close of the 18th century they were divided into bands, of which it is known that the most important were the Guaymas, Upanguaymas, Tepocas, Tiburones, and Salineros. [648] They banded together at various times in order to defend themselves and to attack the nuclei of Mexicans of the zone, achieving combined action, but without effective political unity.

At present they seem to form a single group without marked 619 subdivisions, although they recognize affiliations like that of "Tiburones," "half-Papago," etc., which appear to have little real classificatory significance.

There is great uniformity: they speak a single language 184 incomprehensible to the rest of humanity; they have a relatively 619 uniform culture, and there is tribal unification for matters involving sexual exchange.

The most obvious relations are spatial; they have important 361 settlements that sprung up around the fishing establishments and are more or less permanently occupied. Of these, "El Desémboque," close to the mouth of a river from which they have been displaced, is the most important, with 80 per cent of the Seri

[90 cont.]

961 population. There is an obvious separation there between the
563 Seri and the yori, or non-Seri, with manifest differences in cultural patterns.

The yori occupy an extensive area per person; their homes are quite distant from one another, and four families in conjunction occupy a belt of land of about 100 by 50 meters.

961 The Seri are grouped by families, inhabiting minute
182 squares of from one and a half to two meters to a side. The yori
361 feeling of prestige, based on the territorial expanse of their property,
511 contrasts with the feeling of security based on personal contact that dominates many aspects of Seri life; the small size of the Seri habitation indicates, not a low standard of living, but a distinct [91] concept of comfort, according to which the Seri, having all the desert to live in, like the yori, confine themselves to the limits that personal contact permits.

592 In January, 1952, there were 35 dwellings, with an average of 4.6 persons in each, those lodging four, five, and six persons frankly predominating. Each three or four more closely related families occupied contiguous homes, forming relatively separate conjunctions by themselves, which we might call
596 macrofamilies.

The family is the basic Seri institution, which is manifest in all aspects of life: it is the center of production, co-operation, the division of labor, education, diversion, government, etc.

582 Going beyond the family and macrofamily organization,
619 we have a tribal structure based on the generalized exchange (2)
621

2. Lévy Strauss, Les Structures Élémentaires de la Parenté [Elementary Kinship Structures], Paris, 1949.

of members for concluding marriage, by which all the Seri are actually linked by consanguinity or affinity. One is almost able to include all the members of the tribe on a single genealogical chart, systematically excluding only some few outsiders who have penetrated the group.

582 This situation, which would make one think of a primitive

362 ETHNOLOGY

McGee (1898:214)

262 estimated that maritime resources provided two-thirds of the Seri diet. Kroeber (1931: 20), approximately 30 years later, estimated the proportion at about three-fifths. In the winter of 1960, 30 years after Kroeber's visit, the Seri were obtaining at least three-fifths of their food from the sea.

226 In pursuit of their main source of subsistence, the Seri travel up
 [221] and down the narrow coastal band. In the winter of 1960 they were
 [361] occupying one temporary camp toward the southern end of the band
 [462] and a permanent camp at the northern extreme. Seri women and
 [857] children gather mollusks; fishing is a male occupation. In addition
 to gathering and fishing for their own needs, the Seri dispose of a
 226 portion of their catch on the commercial market. This enterprise
 439 began about 1930, and was encouraged by the establishment, in 1958,
 474 of the Sociedad Cooperativa de Produccion Pesquera Seri with the
 cooperation of the Mexican government.

225 The Pacific green turtle constitutes the largest single item in the
 262 Seri diet for at least six months of the year—from January to June—
 and it is also caught occasionally at other seasons. In 1896 McGee
 estimated that it provided 25 per cent of the total food supply.
 Emphasizing the intimate ecological relationship between the Seri
 and the turtle, McGee (1898: 186-187) wrote:

... perhaps half of the aggregate life of the tribe is spent within easy reach of its [the turtle's] feeding and breeding grounds, and tribesman and turtle have entered into an inimical communalism something like that of the Siouan Indian and buffalo in olden time. ...

[114] Kroeber (1931: 20) believed that McGee stressed the Seri-turtle relationship too strongly and overestimated its contribution to the diet.
 237 McGee (1898: 187), in support of the importance of the turtle to the
 Seri, points to the fact that the turtle carapace is used for, among
 other things, a house covering and buckler, a cradle, a coffin, and foot-
 gear. The carapace is currently used for supporting and roofing
 262 houses and as a starvation food. The contribution of the turtle to
 the diet varies from year to year, but observations made in 1960
 suggest a range of from 15 to 20 per cent as a reasonable estimate.

225 Seri men fish for turtle from boats, which are manned by two or
 [501] three men and are propelled by oars, sails, outboard engines, or any
 combination of the three. The boats operate either individually or
 in groups. The men fish by night or day, depending on the weather
 and sea conditions. When they fish at night, they use a kerosene
 [416] lamp to attract turtles to the surface. The principal implement is the
 harpoon.

411 The harpoon tackle of the Seri is illustrated in Figure 1. It consists of a foreshaft (c-h), a mainshaft (j-k), and an extension cord (i). The component parts of the foreshaft are a projectile point (c), a gasket (d), a wrapping cord (f), a hafting base (g), and a lead cord (e and h). In preparation for turtle fishing, the hafting base (g) is plugged into the socket (j) on the main shaft (k), and the extension cord (i) is looped through the lead cord (h).

INTRODUCTION

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[44] The territory discussed in this paper is somewhat larger than the historical area occupied by the Seris. While Seri settlements are limited today to a quite narrow range, the Tiburon Island and the coast of Sonora immediately adjacent to it, they are familiar with a far larger region, owing to their periodic trips, either on their own after fish, turtle and game or, occasionally, in the temporary employ of the Mexican fish-traders and even farmers. The further away from Tiburon perimeter, the lesser their familiarity with a locality.

The area is limited by Hermosillo in the east, Punta Penasco and Porto Libertad in the north, and Nogales in the south, and finally it includes also the coast of Baja California which the Seris sometimes visit. It also includes all of the islands within that area, Tiburon, Patoa, Rasa, Angel de la Guarda, San Lorenzo and San Esteban.

137 With very minor variations this entire region belongs properly to the Sonoran desert. *Palo Verde*, *Palo Fierro*, *Pithaya*, *Mesquite*, *Cholla*, *Sahuaro*, prickly pear, elephant tree and creosote bush are the basic plants. Among the vertebrates, such forms as the Sonoran bighorn, deer, cougar, jumping rat, badger, coyote, skunk, rattlesnake, sidewinder and Gila Monster are most conspicuous and diagnostic. Among the birds are the road-runner, the raven, as well as many pelagic or littoral birds, the pelican and cormorant among them.

132 The region is one of very low rainfall, limited to the hot summer months, in some places occurring only a few times in a year. Winters are chilly and dry with persistent winds and dust, with the temperature falling down, on rare occasion, to just above the freezing point. Summers are intensely hot, with daily temperatures usually over 100 and the water temperature of the sea along the shore not infrequently as much as 85 degrees. There are great differences between diurnal and nocturnal temperatures, very much influencing the desert life.

134 Within this region there are several different ecological zones or perhaps sub-zones, varying from the alkaline flats like Playa Noriega, and the alkali-and salt-permeated soils of Desemboque to the more bountiful slopes of the mountains and the irrigated mud-flats around Hermosillo.

121 For the sake of distinction, I have selected several of the typical localities or zones as a point of reference either because of their ecological distinctions or because of their significance as a landmark, readily delineating a peculiar habitat. Personally I am familiar only with some of the

[P.1A]

INTRODUCTION

- (12) localities, but I think it is advisable to include others, whose nature is not so different from the main places of Seris' habitations.
- 361 I have selected then 25 localities and I shall give their main characteristics below:
- 13
- [491] 1. **Punta Pefiasco** — a village along the upper shores of the Gulf of California, close to the U.S., connected by a paved highway from Gila Bend. Typical Sonoran zone with extensive sand flats. Very rarely visited by the Indians.
2. **Porto Libertad** — rocky shores, located some 30 miles north of Desemboque. A Mexican village frequently visited by the Seris.
3. **Desemboque** — Seris' main settlement after 1940, just north of and around Punto Tepopa, only a few miles from Tiburon. A narrow strip of poor land, thoroughly permeated with alkali and salt. Vegetation is very sparse. The mesquite, elephant bush, creosote bush, *Cholla* and *Sahuaro* are the main trees. No *Palo Verde* or *Palo Fierro*. *Ocotillos*, *Sahuaros* and mesquite are stunted and scarce, only toward the mountains increasing in frequency and size. Along the shores, sand dunes with kitchen middens, partly covered by vegetation. An arroyo nearby is empty except on a few occasions during the year when flash flood after rains rushes through. Rainfall very scarce. During the summer of 1953 I spent there, it rained very little—only twice and that was short and feeble.
- (172) Water is obtained from a well, near which there is a Mexican ranch where, owing to irrigation, some vegetables are grown and weeds are present such as *Datura*. The coast is largely rocky. Narrow beaches lack wide sand bars. Hence the fauna here is poor.
- (312) 4. **Estero Sargente** — alkali flats and mud flats some 25 km. south of Desemboque along the coast. Vegetation very scarce. *Sahuaros* and *Ocotillos* and other desert trees grow some distance from the shore. Short grasses in some places clump the coastal dunes. Breeding and feeding place of many shore birds, especially of willets and egrets. On the alkali flat near the shore are many peculiar insects, not found in Desemboque, particularly tiger beetles and *Oedemerids*.
5. **Campo Vivora** — little more than half way down toward Desemboque from Estero Sargente, also along the coast. So named after supposedly numerous rattlesnakes. Clumpy grasses. Favorite encampment of the Seris and others while fishing and hunting turtle. The only loggerhead turtle I have seen was right here.
- (103) 6. **Porto Kino** — fishing village directly due east of Hermosillo, nowadays connected with Sonora's
- [491] [P. 18]

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capital by paved road. Formerly, in the twenties and early thirties, Seris' chief mainland settlement. Now with the influx of the Mexicans, the Seris deserted the place completely as a camp site, although they still visit it occasionally. Distinct in the extensive sand beaches and sand marine flats which harbor peculiar bird, fish and insect fauna.

7. **Guayamas**—southernmost point considered here and probably also of the Seris' historical extension. Nowadays very rarely visited by them and probably only while cruising with the Mexicans. Large settlement, many tourists. Backlands; rocky desert.

8. **Tepopa**—spectacular rocky head just south of Desemboque, opposite to Tiburon. Caves, usual mountainous vegetation, *Sahuaro*. Many Seri hunting encampments and one of the places where the Sonoran bighorn is still hunted.

9. **Coast of Baja California**—very rocky area across the bay—almost never visited by the Indians.

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10. **Tiburon**—island in the Gulf of California separated from the mainland by a narrow channel called "Infernillo," only a mile wide. Rugged, mountainous. By **Tiburon** is meant an overall island area in distinction from **Tecomate** or the mountains.

[361]

[221]

11. **Tecomate**—a water-hole and Seri campsite on the northern shore of Tiburon. Today this is the only permanent site on the island where these Indians, actually only a few families among them, still go to live for part of the year.

12. **Mountains of Tiburon**—rugged interior of the island, reaching up to almost 4000 feet. Usual vegetation cover with *Sahuaro* and other typically Sonoran floral components, fauna much as on the mainland except lacking cougar, bighorn and some other larger forms. The interior does have some "tenajas," that is water-holes and there is said to be a rivulet up in the mountains.

13. **Infernillo**—narrow channel between Tiburon and the mainland, often called locally "canal." For the terrestrial fauna and for birds reference is made to the mainland shores of Infernillo. For the marine fauna is meant either the open water in this channel or to the littoral off the mainland. The opposite shores and littorals are covered as "Tiburon." Maximum depth is said to be up to 25 fathoms.

14. **Isla Patos**—small island north of Tiburon and directly due west of Estero Sargente and halfway between Tiburon and Punto Tepopa. Visited by the Indians only occasionally, mostly in connection with the duck hunt.

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15. **Isla Raza**—a small island between Angel de la Guarda and San Lorenzo.

16. **San Esteban Island**—a round island between Tiburon and San Lorenzo, up to 1700 feet elevation. Visited occasionally during fishing or turtle hunt trips or in search of a chuckawalla.

[221]

[P 2 A]

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17. San Lorenzo Island — a narrow long island along the coast of Baja, California, and opposite to Tiburon. Altitude up to 1200 feet. Fauna limited, owing to the distance from the mainland. Vegetation much as elsewhere but impoverished. Visited incidentally as is San Esteban.

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18. Angel de la Guarda — large island along the coast of the peninsula, longer but narrower than Tiburon, slightly lower at its highest point, pretty much waterless. Vegetation as elsewhere, fauna limited. Visited by the Seris very rarely.

19. Desemboque (Mountains) — high mountains immediately back of Desemboque, 5 miles away, rising perhaps to 1200 feet. Vegetation much richer than in Desemboque, with giant *Saguaro* growing to considerable size. More moisture than immediately near the sea-shore. Full Sonoran fauna with cougar and bighorn. Frequently visited during hunts.

20. Tepopa (Mountains) — in distinction from Punto Tepopa as a whole, this refers only to the rugged head. The mountain reaching to over 1800 feet. Thus by Punto Tepopa are meant only the shores and the littoral.

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21. Buena Vista — a ranch inland on the way to Hermosillo, newly deserted. Water present in the large well and periodically in the dry river. Willows, large mesquite, Palo Verde, etc. Now only incidentally visited by the Seris but formerly of some importance as a camp site.

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22. San Francisco de Costa Rica — a ranch inland halfway between Kino and Hermosillo near the main road, presently a large Mexican ranch. Formerly a frequent Seri campsite. The distinctive feature of this locality is extensive sandy areas with very peculiar fauna.

[484]

23. Hermosillo — capital of Sonora, of some 40,000 people. Extensive agriculture, irrigation, river and water-dammed reservoir and cattle and cotton ranges. Once the Seris ranged almost as far as this town but presently they come here only on special business, to the hospital or for a ride to town, with the Mexican truckers. Their observations in Hermosillo are only incidental.

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24. Nogales — U.S.-Mexican frontier town. Seris come here very rarely and only certain individuals. Observations less than incidental.

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25. Campo Utah — large track of irrigated flat lands given up to cotton, operated by the Utah Construction Company between San Francisco and Hermosillo. Somewhat off the main road. Selected as a distinct region owing to the irrigation and cotton fields with their ecological peculiarities. Seris visit this only in transit or on most unusual occasions when they work a few days for the Mexicans.

The Problem

12)

The basic problem concerns the state of Seris' zoological knowledge, that is the general knowledge of the natural history of animals in its main outlines; of their ecology, habits, reproduc-

[P 2B]

II

[P6A]

OUTLINE OF SERI CULTURE

Territory

- 131 Historically the Seri territory at its greatest expansion extended from the coast of Mar del Cortez to Hermosillo and from Porto Libertad to Guayamas and included also the Tiburon Island. Ethnically, the Seris represented a collection of dialectically distinct tribes, the Guyma, Tepoca, etc., perpetually at war with each other, whose common characteristic was their culture, and who were framed in to the north by the Pima Alto and Papago, to the west by the now extinct Cochimi, to the east by the Opata and Pima Bajo and to the south by the Cahita, Mayo and the Yaqui.

- 648 But their area had fluctuated much. After the bitter and disastrous wars against the Mexicans from the late 18th century through most of the 19th, the Seris lost out and were forced by the Mexican government to settle on Tiburon. This incarceration did not last long. McGee had already in 1894 found them on the mainland and Kroeber found them equally divided between Tiburon and Kino. In 1930 when he visited, evidently they lived largely in Kino Bay. As the Mexicans pressed on Kino moving in, in ever greater numbers, and as Japanese fisheries worked the Gulf out of Desemboque attracting the fish-loving Seris, their main settlement has moved once more. About 1940 most of the Seris moved into Desemboque and at the time of my visit, almost all of them lived there while only two families made Tiburon their "permanent" camp. School and availability of the medical facilities as well as the location of the Mexican traders in Desemboque, part of whose scheme the Indians have become, attracted the Seris. Only occasionally today they roam inland to visit other areas, either owing to the hunting or fishing expeditions.

Numbers

- 161 Seri numbers fluctuated as much as their territory and had suffered immense diminution. I shall list the estimates below, indicating the source of the information:

Authority		Source	
1780	Velasco	2,000	McGee
1824	Troncoso	1,000	"
1826	Ratio	1,000-1,500	"
	(Tiburon only)		
1826	Hardy	3,000-4,000	"
1841	de Mofras	1,500	"
1844		550	"
1846	Velasco	500	"
c.1855	Encinas	500-600	"
c.1865	"	250-300	"
1894	Mashem, native	250-350	"
1930	Thomson	175	Kroeber
1934	Mex. En. Cifras	160	Ethn. Synth. Mex.
1953	Smith, Jr.	248	MS. Univ. of Ariz.
1955	Malikin	236	Malikin

* 825 tant factors in their knowledge. At the one pole we have the kangaroo rat, an animal so abundant that it has been indicated for all 23 localities; at the other extreme is the jaguarundi, as already indicated, little known to them, for which no distributional data is available.

The chart shows at once that the informants thought certain animals completely absent from the islands in the Gulf. Thus the cougar, bighorn, deer, badger and cottontail were indicated as absent in the islands. This indeed is the case with most of these certainly, with the possible exception of the cottontail. Its presence or absence in the islands should be verified, especially in that the informants mention the jackrabbit as present in all three of the Tiburon localities although absent from the remaining islands. A number of other animals had been indicated as being absent from Tiburon. Here belong the peccary, porcupine and the sea lion. In the latter case, what the Seris must have in mind is the absence of the rookeries and "permanent settlements" of the sea lions. Individual specimens undoubtedly do show up on the Tiburon coast.

In several instances, the Seris indicated reasons for the presence or absence of a given animal in a locality, usually in the form of comments concerning the ecological features and preferences of the species. In several cases, it may be seen at once how the particular locality is related to the essential habitat features. The cougar and the bighorn are both found in the mountainous, craggy areas, hence the Seris cited Desemboque mountains and Buena Vista for the cougar, and the "big mountains" near Porto Kino, Punto Tepopa and Desemboque mountains for the bighorn. And likewise, all of the localities indicated for the sea lion are those that have rocky beaches.³

Local preferences within the sea were indicated also for all three of the marine *Cetacea*. This took the form of a blanket statement that they prefer deeper waters and for the grey whale also preference for more distant waters of the area, those surrounding the islands of San Lorenzo and Angel de la Guarda.

b) Seasonal

Although the mammals are less subject to the seasonal restrictions than other animals, the Seris have observed certain seasonality, at least for some of the species. Information is available for 12 species of mammals and in that number for six no differences in the seasonal occurrence are known to the Seris, while preference for the cold or hot season has been indicated for three species each. Preference for the cold or hot season has been usually connected with the migratory habits. This has been indicated especially for the killer

The coyotes, the informants thought, were more numerous on Tiburon and especially at Tecamate than on the mainland. This may be owing to the fact that these animals are intensively hunted by the Mexicans and the Americans on the mainland and near Desemboque because of the danger they represent to the domestic stock. As for Tecamate—there is a long standing Seri encampment there and a water hole—which two factors may attract the coyotes.

[P. 14A]

[361]
[312]

123 the boat and took dinner. Afterward, we pulled out into the Gulf and skirted the coast, rowing for miles. We passed great red mountains with the sea beating against their rugged breasts, hollowing out deep caverns; then sandy bluffs with mountains receding, but the horizon was always notched with rugged, pinnacled desert ranges.

[222] We landed for the night on a sandy point and made camp. After our supper two fires were built, Roberto's signal that he was on hand. Also a white scarf was tied to a long pole as a signal of friendship. No answering signal appeared. Probably the people were on the opposite side of the island.

At sunset the sea became calm as a pond and the mountains on Tiburon in the distance turned purple and lavender. The sea reflected all the sky and mountain colors like a mirror.

The next morning we got an early start and it required our united strength to push the boat down to the water as it was low tide. The beach was strewn with various shells and a lot of colored pumice stone which had drifted in from seventy-five miles north, where there are some pumice hills near the sea.

[361] The nearest point of Tiburon was only one and a half miles distant, a short row across. The water was pure green, indicating a shallow sea. We rounded the point and rowed into a bay and then to the head of the bay where there were a few huts called *Rancheria Tinajanita*, or Little Tanks. The water was so shallow in places we had to get out and push the boat a long way out and walk up a long muddy beach over shells and a sort of coral that bruised and cut our bare feet, so that we went as if walking on eggs.

342 The rancheria was built on the shore with no shade; each hut facing the water. The huts were very crude---the frames of *carriso* reed and ocotillo, covered with coarse brush and blankets of dried seaweed. [351] Around the bottoms, or sides, of each hut were piled sea turtle shells three and a half feet high and two and a half feet wide. Over these were piled seaweed and brush, not fastened. Round about were turtle bones and shells, and sea shells, bones and anything that contained meat.

This was just a temporary camp of about eight huts.

123 We left this camp, raised the sail, which consisted of several 202 flour sacks sewed together, and lay in the bottom of the dug-out, while the one-eyed Mexican steered with a paddle. Before leaving, Ricardo left his sign---a sign agreed between him and the Seris. Since he and his family had been so kind to them, they would never harm him or kill his horses and cattle. He erected a stick with a rag to call attention, made a circle with his heel, and inside the circle made the tracks of his right bare foot and right hand.

123 At the bow we carried the white banner always to signify peace. 361 We crossed the bay to a sandy point and came upon another small

[text continues on p. 153]

123 rancheria of about ten or fifteen huts, half tumbled down, all facing
 • 361 the sea and surrounded by turtle shells and deer bones, and sea shells.
 Things were dropped wherever they ate. This rancheria was deserted
 also.

We set sail again and landed on a sandy beach near another deserted
 rancheria called *Palo Fierro*. We hauled the boat way up and took out
 all our things and carried them up to the huts. In this place there
 were twenty-one huts---sometimes three built together. Many of them
 were in a good state of preservation. They were all in a long row
 with bleaching bones and turtle shells on all sides. From the inside
 of one hut I counted thirteen turtle shells around the base. There
 must have been about a hundred turtle shells here, and a few land
 tortoises.

123 There were two or three fragments of painted parts of a boat---
 [64] probably remains of a boat belonging to seven fishermen who got drunk
 and landed here, and were all killed by the Seris two years ago. Six
 months ago a single Seri was captured by some Mexican fishermen and
 killed in reprisal.

As the wind increased it kicked up an ugly sea and we decided to
 camp over night. As we were reduced to about six gallons of water,
 Roberto suggested we take two empty five-gallon cans and go for water.
 I had offered to stay with the boat but was told the Seris would kill
 me if they found me alone.

[72] A Seri had told Roberto to follow a certain trail from the ran-
 cheria and go between the mountains and he would find a *pozo*, or well,
 not far away. Ricardo left his private sign and the five of us marched
 away, following a well-worn trail. For the full distance broken shards
 of ollas lined the trail at short distances, so we knew we were on
 the right trail. Brush began at the sea shore and we passed various
 137 kinds of desert vegetation---several kinds of cactus, especially the
 123 *zarbueso*. This starts with a single great trunk two or three feet in
 diameter, and then branches out like a vase, running up fifteen to
 twenty or more great columns like the *saguaro*. They were thirty or
 forty feet high. In some of these were piled a great accumulation of
 sticks and trash ten feet high or more, and on the top where the sea
 eagle makes its nest. There were a number of these.

Then we came to the *pitahalla*, *cholla*, *ocotillo*, and others, and
 the strange *terote* tree. This tree is the *Bursaria Microphylla*, and
 has an odor like turpentine. It is a fat, dropsical tree like stuffed
 sausage, with crooked ungainly branches coming out at all angles.
 There are three varieties---the *terote Colorado*, *blanco*, and *negro*,
 according to the color of the cut bark. Another strange tree was the
palo blanco. Then there was the *palo verde*, *palo fierro* and *mesquite*.
 The *mesquite* was rare.

123 A number of signs were marked in the sand. We could not translate
 [72] them. We walked single file, rifles in hand, and revolvers handy.

[Text continues on p. 155]

123 handed to show their friendliness.

142 One was a young man with rather pleasant features, his braided
241 hair hanging below his shoulders. His name was Antonio Herrera. The
123 other was a wild-looking specimen called Ramon Blanco. His hair was a
(302) tangled mat with a short braid behind, suspicious black piercing eyes,
long sparse moustache and chin-beard hiding a broad cruel mouth. He
(411) wore the remnants of an old sweater, a short dirty kilt, or skirt,
nearly to his knees, a belt full of cartridges, mostly empty, and a
long knife in a rawhide scabbard.

123 The young man had been baptized and given a name by Roberto, who
(745) had acted as godfather or patrons, many years ago. He wore a hat,
(291) jacket, and pants of blue denim, and guaraches, or sandals of rawhide.

We shook hands all around and then they called and halloed in the
brush and soon three women and a lot of children, wild and half-
(415) clothed, filed into camp. The women were tall, gaunt, unkempt, ragged
(482) and barefooted, paying us not the slightest notice. They were bearing
(422) on their heads large baskets filled with all their earthly possessions---
(854) cooking ollas, scraps of cloth, pieces of turtle meat, bone
(231) brads, hair brushes, and odds and ends. They carried, also, an infant
or two wrapped in odd bits of rags. Several gaunt dogs followed in
their wake.

342 In all, three families came trailing in, removed their household
equipment from their heads and resumed their interrupted and primitive
(512) housekeeping. Each family occupied its apartment in the row of brush
shelters, separated from each other only by brush partitions with a
total lack of privacy. These shelters, always open to the sea, serve
as shade from the fierce rays of the sun, and also as windbreaks, but
are no protection from infrequent rains. They are occupied only for a
brief period and then their nomadic tenants move on to fresh cohunas,
or sea turtle refuge.

123 Soon, a third man arrived while we were near the huts, Manuel
(742) Encina. He was a man of sixty-five, gray hair and mustache, seamed
features, and not evil looking. He was out of breath. He had gone for
water to the same water hole where we had been yesterday, struck our
tracks, had left his water cans and hurried back to warn his people.
He was greatly relieved to find friends.

Since he had gone for water, inquiry revealed there had been no
water in camp for two days, and six adults and one girl of thirteen
and six children were thirsty. We gladly gave them one of our five-
(225) gallon cans of water and they were very grateful. They had caught a
(262) sea turtle the day before and gave us some turtle steaks which looked
like beef or mutton.

312 As the camp was without water and we were running short, the young
402 man and Encina offered to get some. Each took a palanca, or short
123 shoulder pole with knotted ends, fitted empty five-gallon cans in

000 wear ceremonial feathers as did our western Indians. I saw no skin or
164 cutaneous disease, or evidence of tuberculosis or of trachoma---the
curse of our Indians.

142 One boy-child of five years was a handsome child---fat, round,
302 sturdy, with roving great black eyes, large thick lips, a picture of
[241] perfect health. He was almost naked. His hair was done in a pigtail
[637] with a red string braided into it. His face like all the others was
dirty, but he waded into the shallow water with a short spear and I
saw him catch two crabs with his little harpoon. The water did not
bother his face.

415 They had no plates or eating tools, except large deep clam shells,
412 cast up by the sea, which served as cups and dippers. Their long, keen
364 belt knives were used for cutting, carving or skinning, and always the
[237] fingers for eating. They gathered in a circle around an olla of seeds
of long grass growing on the sea bottom prepared by winnowing, parch-
ing and grinding, and then cooked with turtle oil. Each one dipped
his or her fingers into the olla and conveyed them to the mouth with-
out losing a drop, and licked them off with great relish.

271 The dogs eat with the family. There were six or seven half-starved
264 ones. If someone picked up a piece of turtle flipper the dog often
took the first lick at it, bit off a piece or licked it before it
reached the owner's mouth. The dogs were not punished. They were just
slapped to keep them out of the pots:

123 We had a great time that evening in Seriland. The young man played
534 his violin. This consisted of a hollow box cut out of a *palo verde*
[824] tree, and a piece of pine about sixteen inches long; terminating in a
[283] hollow where a single peg was fitted. The one string was twisted deer
[237] sinew, and the bridge was a small round clam shell at the far end. The
[533] bow was a small bent stick and some black horsehair. On the handle was
a wad of rosin fastened underneath. By fingering this string a few
weak squeaky notes were made, and this was the classical music of the
Seri.

Manuel Encina seized his gourd rattle and began chanting. Herrera
tapped a tin can and I beat on an inverted basket and the orchestra
535 was in full swing. A young girl, Rosa, dragged out a turtle shell and
123 standing on it began to dance. This dance consisted of stepping up
and down quickly with each foot alternately, and this stamping, bare-
footed, emitted a hollow sound. Every once in a while I let out an
Indian yell which pleased the Seris very much. For two hours they had
[26] a real swell time. We took one flashlight of the proceeding.

[342] Each family was in their hut, which afforded very slight shelter
[362] as they were only partially roofed over and the sides were broken
[354] down in places. The huts were all adjoining and each had a little
[361] campfire, which did not give much illumination, so the dancing was in
semi-darkness.

(text continues on p. 163)

123 the same as do children and dogs, even though it may be hauled for
 [132] six or eight miles on mule-back.
 [137]

With gifts and hand-shaking all around, we bade goodbye to Lupe and the children and started on our way.

After leaving San Carlos we travelled through a cholla and giant cactus country until we reached Roberto's ranch at Santa Cruz. We had picked up Pancho Oliverria at San Carlos.

Just before leaving the ranch several men lifted a poor woe-begone mare to her feet. She was so poor and weak she could not get up by herself, but once up she managed to stand and finally staggered out into the mesquital, the place of mesquite. One eye was missing and watery matter was oozing out and running down her cheek. A night or two before, a lion caught and destroyed her colt, and probably in an effort to protect it the mare came too near the scene and the lion tore out her eye with one sweep of its paw.

Midway to Santa Cruz we stopped a moment at Blevens ranch Costa Rica. Blevens is a large, florid white-haired American who has lived in this country for fifteen or twenty years and hasn't much use for the Seris as they have killed so much of his stock.

[24] At one time he noticed a dead cow which was all swelled up and badly spoiled. No white man could stand the smell. He told some Seris about it, and they flocked around it, and when they had finished all that was left were the hoofs and horns.

Nene's wife cooked dinner for us at their house which was composed of *carrises* and mud roofed with earth, all supported by mesquite logs. Surrounding it was a hog tight mesquite fence, and in this corral was a fifty-foot deep well which furnished the water supply. Half a bull's hide laced on to an iron hoop and holding about fifteen or twenty gallons, was the water bucket. This was hauled up by a long rawhide rope passing through an over-head block drawn by a mule.

After leaving Santa Cruz with none added to our crew, we wended our way through a maze of mesquite, cottonwood and other timber, gradually working out of the timber to more open country where traveling was not so strenuous. The steering gear was worn so that the old truck would often head for a saguaro or mesquite and stop just short of being smashed.

At last we reached a region of flat baked lake-beds, covered in flood times. Sometimes we could travel fast at fifteen miles and then again we would go in the low where it was soft. About three miles from our destination we took off half our load and piled it to one side and jogged along through a wild desert country with no roads or trails, through chollas, desert brush and terote trees.

123 When we neared a hill of dark volcanic rock a number of Seri In-
 312 dians darted out, and with their help we reached a camp near the coast
 344 where Roberto had recently located a small well of sweet water.

- 123 Clustered near this well were brush windbreaks joined together, divided
• [341] by brush partitions all open on one side. Here were gathered several
[342] Seri families. There was no such thing as privacy or seclusion.

As soon as we stopped and unloaded we were immediately surrounded by a curious, half-starved mob of forty men, women and children, about fifteen to twenty children. All dirty, all ragged, all hungry. Some of them I recognized: others were new to me.

While preparing and eating our supper this motley crowd formed a circle about us and hungrily watched every mouthful. We gave them a little food and an orange all around, and they finally left. By that time we had also finished our bread and coffee and followed to the brush shelters.

- 535 A dance was immediately started. A place was hollowed in the sand,
123 a few short planks placed over it, and the dance was on. Music was
[343] furnished by men tapping on an inverted basket and chanting. Only one
man danced at a time. Sand was thrown over the planks and the Indian
danced a shuffle, scraping his bare feet on the boards. He held a
staff in his right hand and danced to a song called in Spanish *El*
[344] *Toro*. Later other dancers performed, then gave us the *venado* (deer)
dance, taught them by the Yaquis.

This dancer represents a timid deer, hopping up and down to the time of a rattle held in the right hand, and the chanting of the singers. The *venado* dancers stooped over frequently, turning first to one side and then the other to look behind. Manuel Encina was the *venado* and Chico Romero, a very large young Seri, acted the part of a coyote, crawling and jumping on all fours and barking and every once in a while biting the calf or thigh of the *venado*, then jumping back and barking. It was acted with great realism, and the onlookers, especially the children, enjoyed it immensely.

- A wilder, more barbaric scene was probably seldom witnessed in America than this gathering of Seris on the shores of the Gulf of California, dancing the *venado*. The camp fire threw a flickering light over dark fierce faces with low foreheads and frowny unkempt hair.
[302] One man, Luis Torres, the head "ship carpenter" with a moustache and chin beard, his hair low-down framing his dark face, looked like a savage from the wilds of New Guinea. Another, Santo Blanco, a secondary chief below Juan Tomas, has a straggling moustache curling over cruel projecting lips which rarely smile, while his fierce black eyes peering through his black thatch of hair, have a perpetual scowl. The monotonous sing-song chant accompanied by the soft roar of the surf added an indescribable eeriness and weirdness to the dark night.

- 123 We soon turned in as it was then eleven o'clock, and we all fell asleep lulled by the waves of the sea.

123 Then Chico Romero and his load of children and dogs arrived and
484 he unloaded his impedimenta on the beach, and soon the women came walking along the beach and joined the party. The boats carrying the heavy things and children; the women, with their babies and a few light things on their heads, walk along the beach when possible and follow the boats, which hug the shore to avoid the strong currents and tide. The boats are propelled by paddles mostly, though some of the Indians use oars. The women are slightly built, slender and inclined to be gaunt, owing to the hard life and lack of food. Their cheek bones are quite prominent and their profiles present protruding lips.

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422 Having no permanent homes, moving hither and thither for their
[36] various food supply, household things are not accumulated and life is reduced to its very simplest elements and absolute necessities.

Crude baskets made from shoots of the terote tree, vessels in which to cook, and some patched rags in place of Pelican skins to serve as blankets to the fortunate few, constitute the family possessions. Strange to relate, many of the women have an over-supply of milk; and according to Roberto have puppies nurse what the babies cannot take. One woman was known to nurse a baby pig on one side and a puppy on the other.

231
[85]

[24] Family dogs lick all cooking vessels which is unnecessary as they are thoroughly clean when the Seris are through with them, and also
[89] lick the infants clean after performing their natural functions, so they are quite indispensable. I saw a Seri girl place on the sand a small can of water for a dog and then saw her drink some of the remainder and pour the rest back in a five-gallon can. Dogs frequently swim across the Infernillo to join their masters.

732 Asked about cripples and incompetents, Roberto said they probably did not exist. The conditions of survival were too precarious to admit of anyone living who was unable, by physical disability, to hunt or fish. There are two or three men who are nearly blind or so. The wives of these men eke an uncertain living for them by the hardest

262 struggle. The sea turtle is the staple; one man and one good boat can
433 secure a living for five families. There are now nine boats, but one
501 boat to a family would practically free them from continual want.

262 With the exception of four bones in the flippers and the bones of the
237 head, all the sea turtle is used---the meat, blood, entrails, shell which furnishes food and oil, skin of flippers which furnishes sandals, sinew for strings. Nothing is wasted except contents of the entrails.

123 Again, we laid our blankets on the clean white sand of the shore and were lulled to rest by the murmuring sea.

123 Daylight found us up the next morning, and we breakfasted, rolled
484 up our blankets, pushed the boats into the sea and were off by the time the sun rose over the mountains and shone over a glassy sea. Two Seris towed their boat by a tump line, while a boy of twelve steered

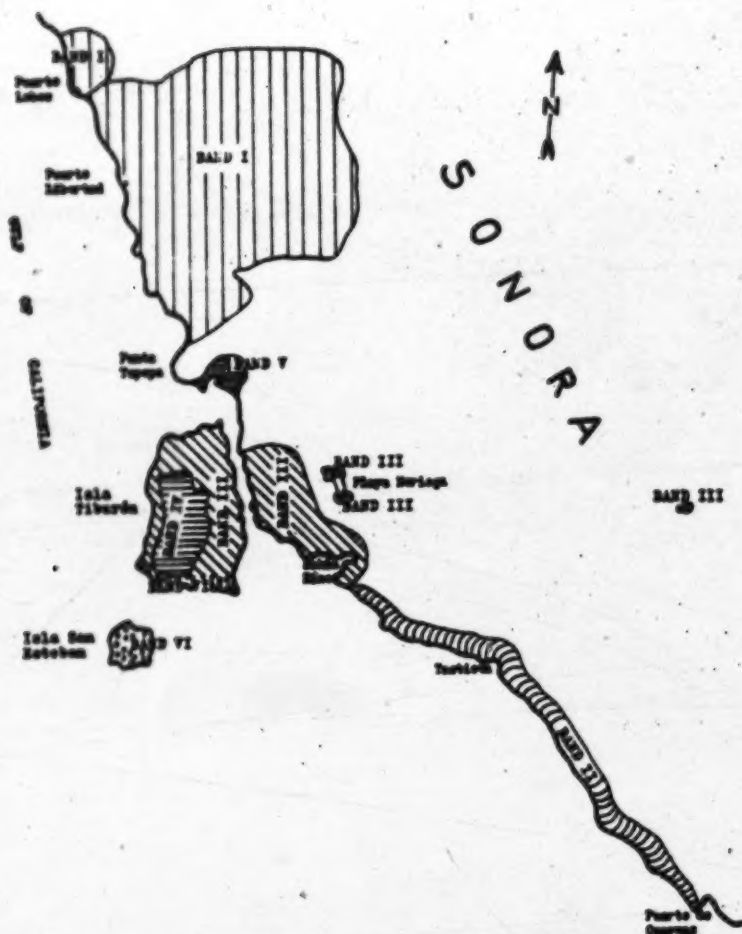


FIG. 2. Distribution of Seri Bands

DIALECTS

The existence in former times of three distinct but mutually intelligible dialects seems evident.

Dialect 1 was spoken by Bands I, II, III, and IV. Any diversity of speech among these four bands seems to have been confined to word formation. The Seri language of today is derived largely from this dialect. [192]

Dialect 2 was spoken by Band V. This dialect is extinct and only scanty data on it can be gathered. From a number of expressions gathered, it appears that the dialect was characterized by extreme intonational contours. [194]

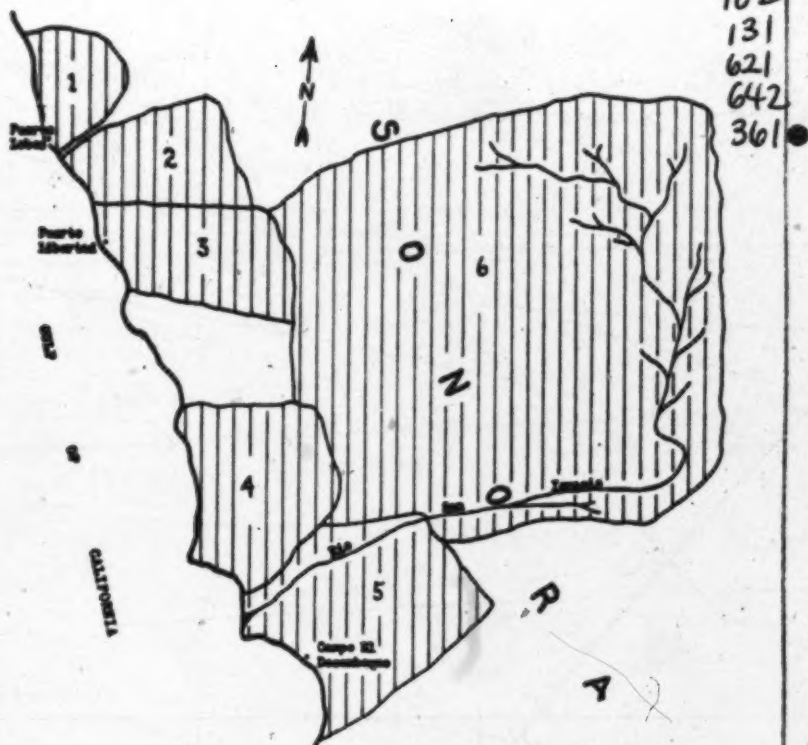


FIG. 3. Subdivisions of Band I

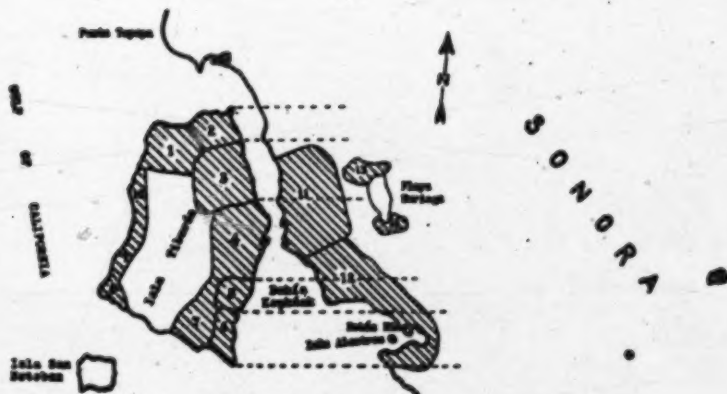


FIG. 4. Subdivisions of Band III

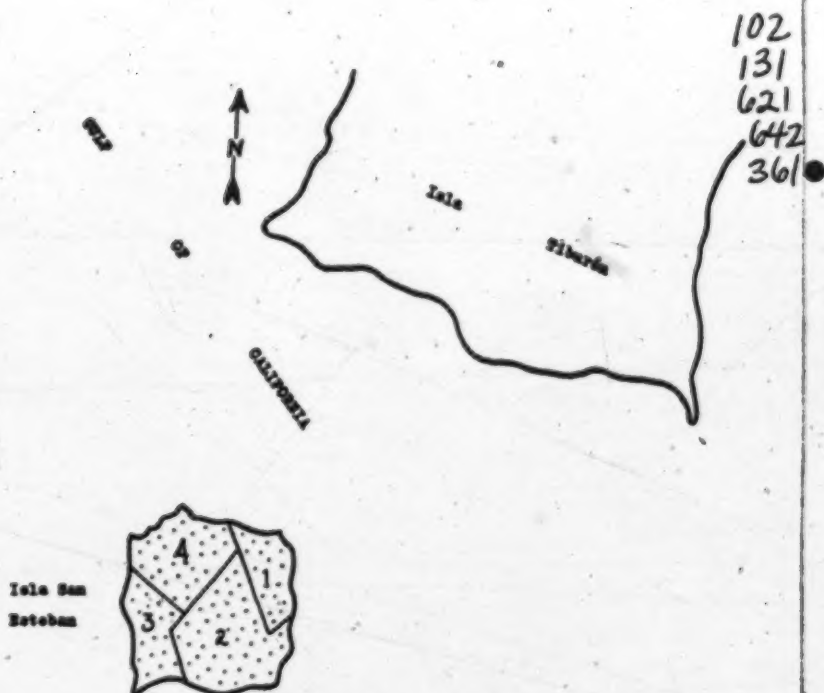


FIG. 5. Subdivisions of Band VI

BAND SOCIAL STRUCTURE

The social structure of the bands can be properly understood only in relation to the social structure of their smaller units, the *i?iziitang*. The kin group which resided in and dominated each such subdivision constituted a clan.⁵ This group conforms to Murdock's three major specifications for clan designation.⁶

Murdock's first specification states that a kin group, to constitute a clan, must be based explicitly on a unilinear rule of descent. The kin group of each Seri band subdivision was based on patrilineal descent. An individual was closely associated with the group of kinsmen of his subdivision, all of whom were related to him through males only. The father was the head of his household. For example, he assumed leadership in marriage negotiations. Upon his death, the eldest son took his place.

The second specification states that such a kin group must have residential unity. Seri marriages were exogamous with respect to the subdivision,⁷ and the rule of residence was patrilocal. The domicile was set up near the home of the groom's parents.

Except for the occurrence of several battles, relations between Bands I and III were peaceful. 578
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Relations with non-Seri groups were not always peaceful. 642
For many years the members of Band I were on friendly terms with the Papago; they often camped together and even intermarried. Due to a misunderstanding,¹⁰ fighting erupted between the two groups and many people were killed in the years which followed. 648

BAND II

The external relations of Band II were decidedly turbulent. Although their primary base of operations was a coastal area, the people did not use the ocean as a source of food. They preferred beef and horse meat which was easily acquired by stealing animals from ranches. Here again the wrath of the ranchers and the government was incurred. [262]
[721]

A small group of Yaqui eventually joined Band II and intermarried with them. The Seri claim that the Yaqui induced the warriors of this band to assault travelers on the road between Hermosillo and Guaymas. Coyote Iguana, who according to Seri tradition captured Lola Casanova, was of this band. This activity soon brought retribution from the government. Later, dissension arose between these Seri and the Yaqui. [582]

The enmity and strife that occurred between Bands II and V were mentioned above.

BAND III

The history of the internal relations of this band on Tiburon Island seems to have been marked by periods of violence. Battles between subdivisions sometimes occurred; however, they were usually short-lived and soon forgotten. A major struggle once occurred when a shaman named ?apetla "the invincible one" and warriors from subdivision 4 made repeated raids upon the neighboring subdivisions and killed many. Eventually, his enemies overcame their fear and destroyed the killer. 642
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621
[721]

Although the inhabitants of Band III were hunters, gatherers, and fishermen, they began to rob cattle once they became established on the mainland. They too incurred the wrath of ranchers and the government. 642
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721

BAND IV

Since the members of this band were, by choice, inhabiting an inland area of Tiburon Island, they lived in relative isolation as hunters and gatherers. Their primary contacts were with members of Band III with whom they intermarried. 642
621
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[361]
[582]

so named must be of the same sex as the first. The significance of land ownership needs further investigation. 000

Many of the Seri still prefer, when possible, to live in their chosen band area. Sometimes a person, when he is approaching death, will ask to be taken to his own *i?iziitig*, where he can die and be buried in the area of his choice. 361
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NOTES

1. Due to printing limitations, stress on Seri words has been omitted, and several orthographic symbol changes have been made for this paper. The phonetic values of the symbols used are the following: p is voiceless labial stop; t is vl. dental stop; k is vl. velar stop; ʔ is glottal stop; f is vl. labial fricative; w is vl. labial grooved-rounded spirant; s is vl. alveolar spirant; z is vl. alveo-palatal spirant; l is vl. lateral spirant; h is vl. velar spirant; x is vl. back velar spirant; m is labial nasal; n is dental nasal; ŋ is velar nasal; y is palatal semivowel; i is a high close front vowel; e is a low close front vowel; a is a low open central vowel; o is a mid close back vowel. 128
104

2. These data were compiled during field trips to the Seri camps during the years 1956-61, the studies being carried out under the auspices of the Summer Institute of Linguistics. The principal informant was R. Herrera T. whose information was checked with and supplemented by nine of the older members of the tribe. I am indebted to my colleague, David Thomas, who read an earlier draft of this paper and made helpful suggestions. 114
115
122
124

3. 1) W. J. McGee, "The Seri Indians," Bureau of American Ethnology, Annual Report, No. 17, Part 1, Washington, 1898. 2) A. L. Kroeber, "The Seri," Southwest Museum Papers, No. 8, Los Angeles, 1931. 3) W. B. Griffen, "Notes on Seri Indian Culture, Sonora, Mexico," Latin American Monograph Series, No. 10, Gainesville, 1959. 113

4. It will be noted that between subdivision 3 and 4 on Fig. 3 there is an unnumbered area, the status of which is uncertain. 642
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5. Kroeber states that McGee's concept of Seri maternal lineages crystallized into totemic clans with matrilineal rule seem a fantasy. In Kroeber's opinion, "The Seri may never have had sibs or clans; but the fact that they appear to lack them now is no positive evidence that they were without them three centuries ago. Shifts of residence, contraction of territory, shrinkage of numbers, amalgamation of distinct bands, may well have obliterated much of such social fabric as they once possessed." 648
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Griffen discusses the nature of the former Seri bands and states, "they may have been patrilineal and exogamous. The criteria . . . that Julian Steward has expounded for the formation of exogamous, patrilineal bands . . . are and presumably would have been met formerly in the Seri habitat." Griffen lists other aspects of this type of band which are also verified to some extent by his data. From reading his material, it is obvious that he suspects the existence of clans at some earlier period. He emphasizes the need for further investigation. (642)

6. G. P. Murdock, *Social Structure*, Macmillan Co., New York, 1949. 113
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7. Marriages were usually contracted within the band.

8. As Kroeber points out, their memory likely covers only the latter part of the period of Spanish contacts. 103
648

9. The Seri recall nothing of Seri-Pima contacts and little of Seri-Apache relations.

10. The story is related that one day some Seri entered a cave where they found several Papago jugs filled with seeds. Being hungry, the people ate the seeds and left some arrows as token payment. The Seri say that the Papago apparently believed the arrows were intended as an insult. Fighting broke out soon afterward. (92)

11. The Seri concept of the band annihilations is seen to be in contradiction to McGee's statement (p. 132): "Concordantly with their primary characteristic, the Seri have avoided ethnic and demotic union beyond the narrow limits of their own kindred; and even of these they seem to have cast out parts, annihilating the Guayma and Upanguayma, displacing and nearly destroying the Tepoka, and outlawing individuals and (apparently) small groups." 114
628
642
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